Chapter II: Alternatives

Introduction

Four alternatives for the proposed Marine Mammal Center Site and Facilities Improvements Project are evaluated in this EA. A regional location map and project area map showing the location of the study area are presented in Figures I-1 and I-2 in the previous chapter. Under Alternative 1 (No Action), the project area would remain unchanged, except for normal maintenance and repair. The other three alternatives propose varying configurations for accommodating The Center's program through some demolition of existing structures, some new building and infrastructure construction and new parking. Alternative 2, the Consolidated Program Alternative, locates most proposed uses, including parking, in one location at the treatment site. Alternative 3, the Consolidated Program, Remote Parking Alternative, locates most proposed uses at the current treatment site but places most of the required parking at an area below the treatment site. Alternative 4, the Split Program, Limited New Construction Alternative, splits Center functions and parking between its current Fort Cronkhite location and accommodates the balance of proposed uses and parking through some new construction at the treatment site. All three action alternatives implement actions designed to improve and upgrade facilities at The Center. All three action alternatives would consolidate all or some of the administrative and animal care facilities in the same location, and would provide for construction of a new perimeter "ring road" to improve access for delivery of large animals and equipment, and service and emergency vehicles.

Description of Alternatives

Background on Alternatives Development

The Center developed and refined the three action alternatives evaluated in this EA through an internal planning process and in response to scoping comments (see Chapter I). Each alternative was designed to accommodate the project objectives described in Chapter I and still present a range of options that address environmental opportunities and constraints of the site and project.

This Chapter provides background information on the development and refinement of the alternatives, as well as project conditions that have been identified by The Center. The EA identifies and analyzes a range of alternatives that are consistent with the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations. Actions developed as part of this process also must be consistent with current editions of applicable codes during the design and construction of the project.

Common Components of Action Alternatives

Buildings

- The demolition of approximately 6,000 square feet of non-historic structures at the treatment site would occur under each action alternative.
- All action alternatives retain the use of Building #1065 at Fort Cronkhite, although its use varies under the alternatives.

- No changes are anticipated for the Existing Harbor Seal Hospital in any of the action alternatives.
- All three action alternatives would maintain visitor separation from hospital functions.

Utilities/Infrastructure

- All three action alternatives would provide key upgrades to the treatment site's filtration system, much of which would be relocated and housed underground in the old Nike silo on the east end of the treatment site.
- Pens and pools in the patient boarding area would be upgraded in all three action alternatives. These upgrades would include replacing approximately 15,400 square feet of existing structures with approximately 19,500 square feet of pens and pools made of sturdier materials. The project also would provide shade structures to many pools; build pools at, or near to, grade to enable easier transfer of animals; enable animals to access pools with less stress; and enable easier access to animals. All action alternatives include upgrading the existing cetacean pool on the eastern edge of the treatment site.
- Under all action alternatives the water holding capacity at the treatment site would be increased from 47,000 gallons to 207,000 gallons. This increased capacity would be accommodated within the new pens and pools that would be larger and deeper than existing ones.
- Under all action alternatives wastewater would be combined with drainage from the pens and pools in the following manner: area drains installed within the existing pens and pool areas would be designed primarily for the wash-down operations in the pen enclosure. This operation necessitates washing down raw sewage and therefore these area drains would be connected directly to the sanitary sewer. The area within the existing pens (about 10,000 square feet) also would receive rainfall which would be directed towards the sanitary sewer.
- To address the sanitary sewer lift-station overflow situation, the project design will improve the current situation and ensure that the overall combined outflow from The Center's facilities would not exceed current levels nor exceed the capacity of NPS facilities. All action alternatives would include the operational capability to interrupt rainfall flowing to the pen enclosure area drains either by using the 40,000 gallon cetacean pool as an equalization basin or some comparable basin to regulate the timing and flow of rainfall. Cetacean pools are not occupied during the season when storm events would occur. Details of this system will be fully developed, reviewed, and refined by the MMC in coordination with the NPS during the design development and construction drawing phases as well as the construction permitting process.
- All action alternatives are designed for the same square-footage of area exposed to rainfall. This is accomplished by separating the interior pen area from the adjacent walkways and by covering (roofing over) a portion of the pen area. The walkways outside of the pen enclosures and the new roofed areas would drain directly to the storm system (not the sanitary system).
- Under all action alternatives, the stormwater system would be designed to provide the maximum opportunity for surface run-off to infiltrate the soil. Use of vegetated swales and planting areas would be used to reduce run-off and remove contaminants. Parking lot drainage would be designed so that run-off is directed away from sensitive areas and fed into the stormwater system, not the sewer system.
- All action alternatives propose to continue the use of propane gas (or LPG) to supply a new gas-fired hot water boiler for domestic hot water and heat-exchange for 'closed', re-circulated water in a radiant floor heating system. The propane tank would be sized for once-per-month delivery. The size and placement of this tank would be reviewed with NPS during the design development review process.

- Under all action alternatives, all existing Life Support System (LSS) equipment would be removed, native vegetation would be planted in this area, and new equipment would be installed in and above the silos. LSS equipment includes pumps, filters, fractionaters, piping, valves, control panels, pressure gauges, contactor tank, and deaerators.

Circulation and Parking

- All action alternatives include an 18-foot wide perimeter road (ring road), which is the same for all action alternatives on the eastern edge of the treatment site, but varies on the far-western edge of the treatment site in how parking would be accommodated. This perimeter road is required for deliveries of animals and supplies and to provide fire and emergency vehicle access. The road would be located around the perimeter of the treatment site to avoid locating a road in the middle of pens and pools, which would be harmful to the mammals on site.
- Although parking configurations vary under the action alternatives, as discussed below (see Table II-3 at the end of this Chapter), under all action alternatives it is assumed that up to 16 parking spaces would be available for use by The Center in shared locations outside The Center's assigned area. These spaces are needed for average daily operation of The Center and are currently within existing shared Fort Cronkhite parking lots and/or the NPS maintenance area.
- Under all alternatives, The Center would continue to park up to two buses in the nearby NPS maintenance yard. New sidewalk access to The Center from these bus spaces is being considered by NPS as part of the road reconstruction included in work to date on the Marin Headlands/ Ft. Baker Transportation Draft EIS (not yet completed).
- Several times a year (no more than 6 times a year) The Center holds events that require additional parking beyond average daily operation for one-time events. In advance of these special events, The Center would be required to coordinate parking needs with GGNRA's Special Parks Uses Group.

Other Actions

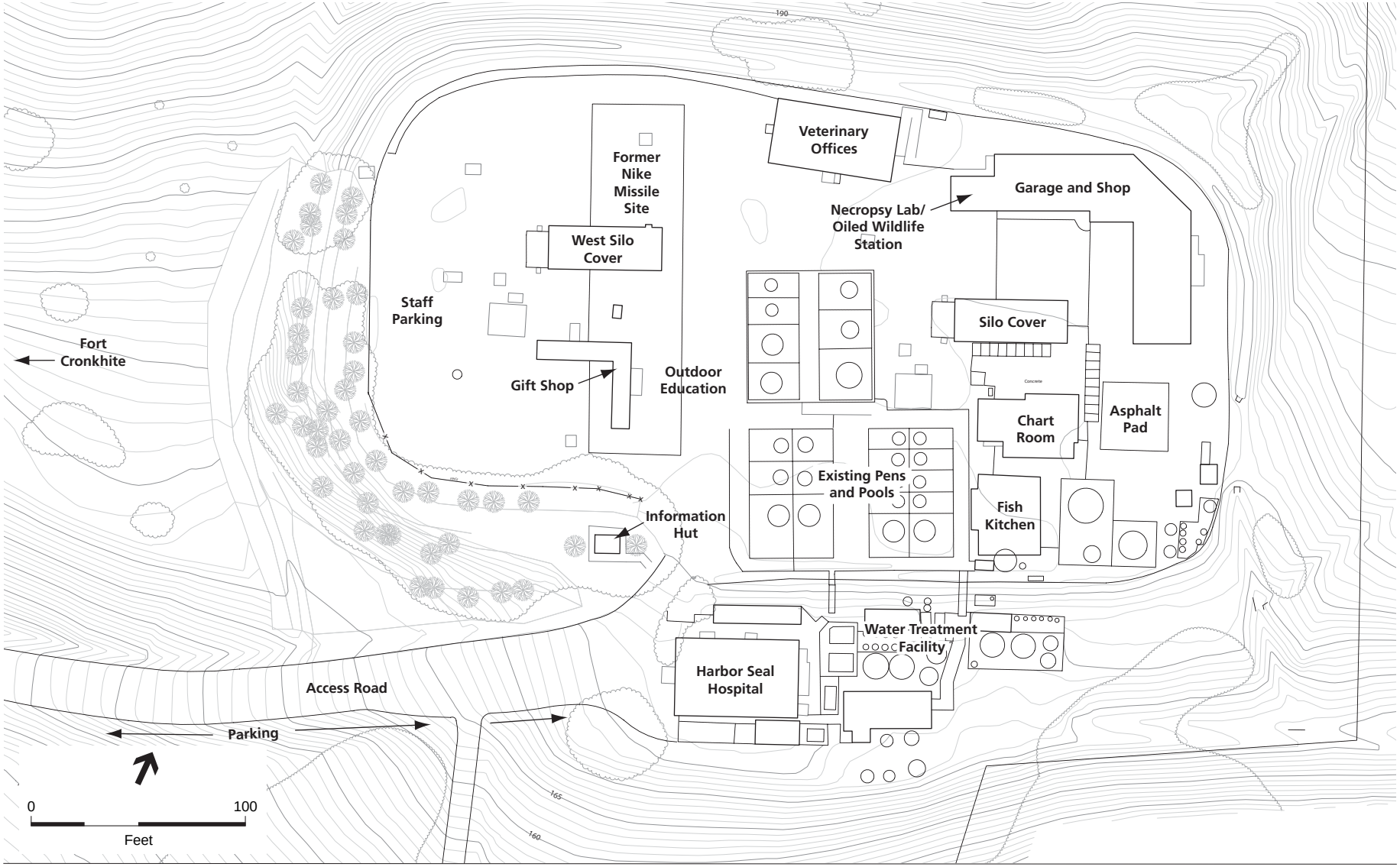
- Under all action alternatives, project construction would occur within two six-month periods to avoid the season (approximately March – September) of maximum animal occupation.
- Under all action alternatives, preservation of natural dark would be incorporated into the site design to the greatest extent possible. Site lighting would be focused downward and shielded structurally to allow for natural night skies.
- Under all action alternatives, The Center's designers would apply sustainability measures throughout the project.

Alternative 1: No Action

Alternative 1 is the "No Action" Alternative and describes the action of continuing the present management operation with no major improvements to the facilities beyond any life safety code concerns or reasonable management actions (see Figure II-1).

Alternative 1 provides a baseline from which to compare other action alternatives, evaluate the magnitude of proposed changes, and measure the environmental effects of those changes. The no action concept follows the guidance of CEQ, which describes the No Action Alternative as representing no change from the existing management direction or level of management intensity.

Figure II-1
Alternative One: No Action



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

There would be no net change in occupied square footage (26,000 sq. ft.). Under this Alternative, the existing facilities in the project area would be maintained without significant alteration. The Center's facilities would continue to be housed in modified freight containers and trailers. The water transport and filtration system would not be significantly upgraded. Old pumps that currently malfunction would undergo minimal upgrades. Under this alternative there would be no significant improvements to the visitor experience and there would be no consolidation of The Center's program. Administrative and some research functions would continue to be physically separated from the treatment site. There would be no changes to the kennel area south of the treatment site, which is currently used for storage.

Components of Alternative 1, and thus the existing conditions, are described below:

- **Fenced Pen Area (Pens and Pools):** This 15,400-square foot area, used for rehabilitating rescued marine mammals, is located in the central portion of the treatment site, surrounded by chain-link fences and gates. The Center has installed 30 pens and fiberglass pools on concrete slabs. An above-grade filtration system exists just outside the original inner perimeter fence.
- **Water Treatment Facility:** New pumps and water retention tanks were added to the filtration systems in 1992. Significant upgrades were constructed in 1998. The water system structure was built in 1985. This facility covers approximately 2,800 square feet of land located on the south side of the treatment site.
- **Veterinary Offices:** This 1,750-square foot structure is a double-wide trailer located on the north side of the treatment site in 1994.
- **Necropsy Lab and Oiled Wildlife Station:** This 1,750-square foot building (250 feet of which is for necropsy functions) was assembled from several structures on the northeast side of the treatment site and was enlarged in 1994.
- **Chart Room:** This 650-square foot building was constructed from two shipping containers and is located on the southeastern portion of the treatment site.

Chart room structure

- **Fish Kitchen:** This 900-square foot building, made from a modified shipping container, is located at the southeastern portion of the treatment site and was moved to the treatment site sometime after 1975. It was enlarged by joining a second container with a free-standing roof structure over the enlarged building in 1994.

- **Outdoor Education Classroom:** This approximately 1,000-square foot area was established in 1981 and is located adjacent to the gift shop and includes storage containers and bleachers used for educational programs.
- **Gift Shop:** The Gift Shop is contained in a 600-square foot temporary building just inside The Center's entrance on the west side of the treatment site, with adjacent storage.
- **Harbor Seal Hospital:** The existing 1,900-square foot Ready Building was modified in 1999 to accommodate hospital functions for Harbor Seals. At the same time, cast-inplace concrete pools and urgent-care recovery pens were added to support animals recovering from surgeries in the Hospital. Ornamental shrubs have been planted in front of the Hospital.
- **Miscellaneous Storage:** The treatment site also contains approximately 11,000 square feet of shop and storage space in old sheds and other makeshift buildings.
- **Former Kennel Site:** Just south of The Center's facilities is the site of a former dog kennel. This approximately 13,000-square foot space is currently used for (temporary) storage of crates and pens and other miscellaneous equipment not regularly in use.
- **Fort Cronkhite:** The Center currently uses a total of 7,590 square feet in three buildings (#1065, #1071, and #1044), at nearby Fort Cronkhite (see Figure I-1). Building #1065 houses 4,840 square feet of administrative offices; Building #1071 contains 1,180 square feet of education space; and Building #1044 includes 1,570 square feet used for medical laboratory.

Parking

The Center would continue to have a total of 91 parking spaces for daily operation split between the treatment site (55 spaces, including 2 handicapped spaces) and outside The Center's assigned lands (Fort Cronkhite and elsewhere - 36 spaces) (see Figure II-2). Primary accommodation for visitor parking would continue to be the 13 parallel parking spaces located along the access drive to The Center (included in the 55 spaces discussed above). Buses would continue to park and turn around in the NPS Maintenance Yard.

Utilities

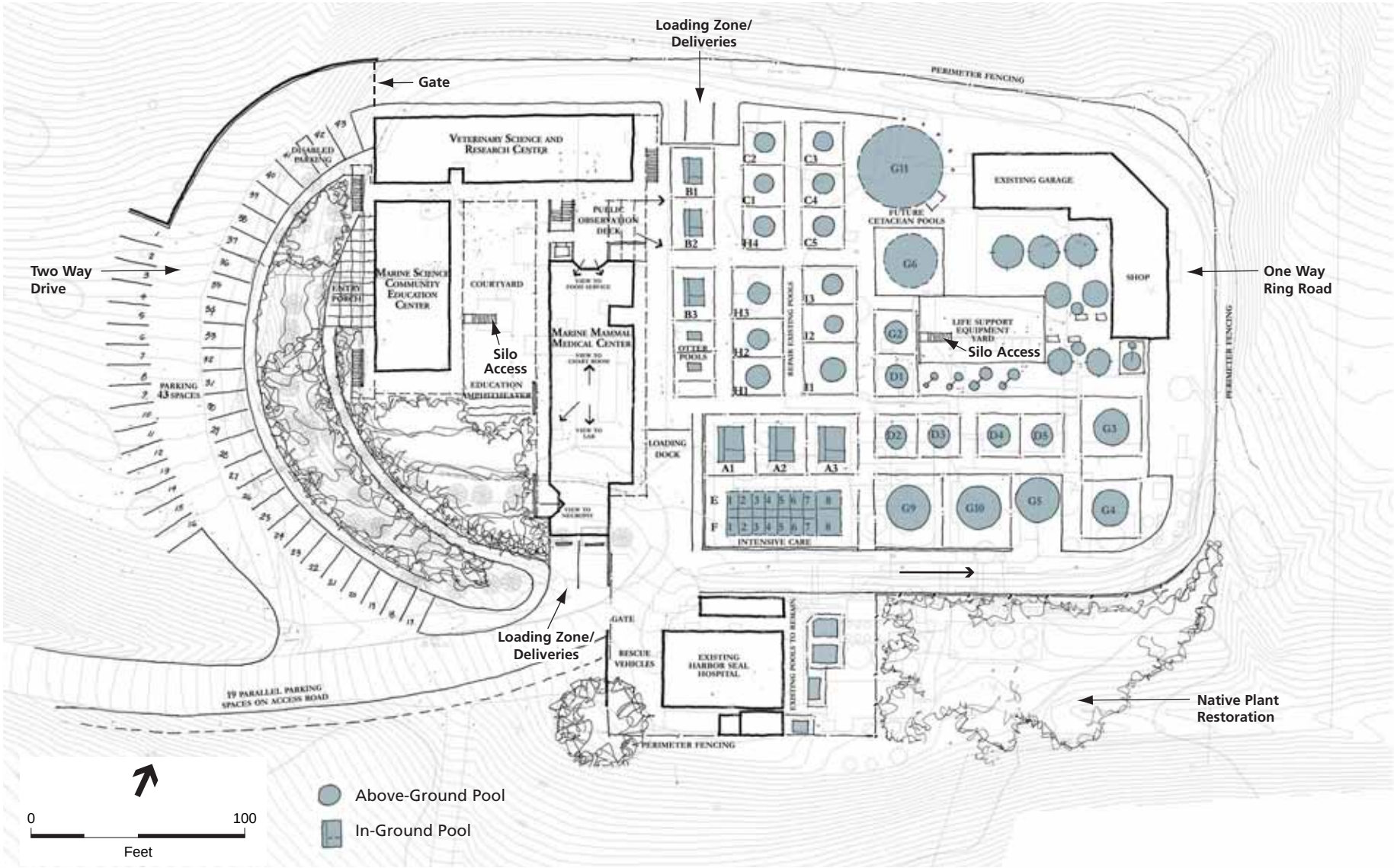
Utilities under Alternative 1 would not change or be upgraded beyond normal upkeep.

The existing PG&E electrical service feeds to the treatment site would not be changed, updated or undergrounded. Under the No Action Alternative, natural gas needs would continue to be provided by propane tanks. Stormwater and wastewater systems also would not be substantially changed; thus the potential contribution from The Center's pen enclosures during extreme storm conditions to the lift stations' overflow would remain, until addressed separately as funding allows.

The domestic water system and the overall Center's water holding capacity would remain at its current capacity of 47,000 gallons. Water intake, filtration, and discharge methodologies would not be modified with modern technologies.

Under this Alternative pens and pools would continue to be used in their aging condition. It is assumed that recurring problems with the water filtration system that have to do with leakage, breakage, and sanitation would continue under this alternative. Regular maintenance would continue but would not include any major improvements or upgrades to Center facilities.

Figure II-2
Alternative Two: Consolidated Program Alternative



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

Visitor Experience

Alternative 1 would not change the current visitor experience, which primarily consists of a small hut at the entrance (that is often not occupied), the gift shop, and three interpretive panels with limited information. Currently, there is very little sense of arrival and no orientation to the visitor that they are entering a hospital environment and why there may not be any animals on the front row for them to see.

Alternative 2: Consolidated Program

Alternative 2 includes the demolition and removal of the following non-historic buildings (totaling approximately 5,600 square feet) at the treatment site:

- Chart Room
- Fish Kitchen
- Veterinary Offices
- Gift Shop
- Necropsy Lab/Oiled Wildlife Station
- Information Hut
- Water Treatment Facilities

Under this alternative, The Center would occupy a total of approximately 35,200 square feet of building space (see Table II-4 at the end of this Chapter). Approximately 4,800 square feet would be retained in Building #1065 at Fort Cronkhite (see Figure I-2) for use by visiting researchers and approximately 12,900 square feet would be retained at the treatment site. At the treatment site, approximately 7,430 square feet of the retained space would be underground in the existing missile silos; 3,570 square feet would be in the existing garage and shop (which house some labs and storage); and the remainder of currently occupied space to be retained would be the Harbor Seal Hospital (1,900 square feet).

Alternative 2 includes the construction of three new buildings totaling approximately 17,500 square feet as described below (see Figure II-2). New buildings would be constructed on the western portion of the treatment site. The buildings would be organized around a central open courtyard.

This alternative includes construction of a new perimeter ring road with new parking on the west side (double-loaded drive with 43 spaces) as well as expanded parallel parking along the access road (19 spaces). The former kennel site, south of The Center, would no longer be used for offsite storage and this area would be included in project restoration plans.

Proposed New Facilities

- **Marine Science Community Education Center:** Alternative 2 would provide a new two-story, 5,760-square foot Marine Science Community Education Center. The Education Center would be the primary visitor facility and would include an information desk, a marine science discovery room, a retail store, an education classroom, a meeting room, and The Center's offices for communications, membership, and development. Construction of this building would replace the functions of the Gift Shop and Gift Shop storage (600 and 320 square feet, respectively, which would be demolished) and education and administrative functions (6,000 square feet currently at Fort Cronkhite).

- **Veterinary Science and Research Center:** Alternative 2 would develop a Veterinary Science and Research Center building which primarily would serve staff working with the mammals. Some space would be accessible for the visiting public. This two-story, 7,800-square foot facility would include veterinary science offices, a staff/volunteer common area (including tables and seating areas), visitor restrooms, administration and education offices, and a mechanical room. Public restrooms would be located on the first floor, with staff and volunteer restrooms located adjacent to work spaces in other locations. Construction of this building would replace the functions of the Veterinary Offices (1,750 square feet), and various storage buildings (1,120 square feet), which would be demolished.
- **Marine Mammal Medical Center:** Alternative 2 would develop a new Marine Mammal Medical Center building. The one-story, 3,920-square foot Medical Center would include a patient food preparation area, pharmacy, chart room, research laboratory, necropsy research area, and public space. Construction of this building would replace the functions of the Necropsy Lab (250 square feet), the Fish Kitchen (900 square feet), and Chart Room (650 square feet), which would be demolished.

  In the necropsy research area, post-mortem tissue and serum have been banked for ten years. This bank is a critical resource for research at The Center and it also provides samples to researchers around the world. The new necropsy room proposed under Alternative 2 would allow faster diagnoses and more efficient operation due to increased storage capacities and proximity to the adjacent research laboratory.

  A public area within this building would be designed to promote the educational mission of The Center by incorporating observation windows in the building to allow visitors to view staff/volunteer functions and activities. Educational exhibits would be placed near the observation windows to help interpret The Center's activities.
- **Courtyard and Amphitheater:** Alternative 2 would incorporate a new centralized courtyard and amphitheater in the site design to provide a common gathering area for visitors and volunteers. The amphitheater would provide seating for up to 60 visitors. The Center staff would offer educational and interpretive talks at the outdoor amphitheater.
- **Public Observation Deck:** A public gathering space would be located between the Veterinary Science and Research Center and the Marine Mammal Medical Center, which would include an observation deck (approximately 800 square feet), elevated approximately one story above ground level. This deck could also be used as an outdoor classroom space and would provide views of the marine mammal patient boarding area and the display windows of the Marine Mammal Medical Center.
- **Research Facilities:** Approximately 4,800 square feet of space would be retained in Building #1065 at Fort Cronkhite for use by visiting research personnel.

Circulation and Parking

Vehicle Access

Operations and parking would be consolidated at the treatment site under this alternative and would minimize current internal traffic that operates between Fort Cronkhite and the treatment site. Alternative 2 includes construction of a one-way, 18-foot-wide ring road and new parking on the west side of The Center.

These elements would extend The Center's developed area by approximately 26,000 square feet outside the current footprint on a newly graded area. The ring road would provide emergency vehicle access to the facilities and would be used for The Center's day-to-day operational needs such as daily deliveries by large trucks, garbage pickup, fish deliveries, supplies, and animal

admissions. The east side of the new ring road would extend beyond the currently developed footprint and would be closed to public access. The ring road would be designed to separate the vehicles from the animal patients as well as the volunteers, staff, and visitors on foot.

Parking

A new parking lot would be provided on the west side of the treatment site, along the ring road. Alternative 2 would provide a total of 78 total parking spaces for daily operations, as opposed to 91 spaces under existing conditions. 43 spaces would be located in a new lot west of the Marine Science Community Education Center (including two handicapped spaces south of the Marine Mammal Medical Center). The existing 13 parking spaces along the access road would be expanded to 19 spaces, and another 16 spaces would be available outside The Center's assigned lands (potentially in the NPS Maintenance Yard).

Utilities

Electrical

Alternative 2 would maintain the two independent, above-grade, electrical feeds but would underground the feeds from the existing poles to new main switchgear equipment located within the new buildings at the northwest corner and within the above-grade silo enclosure on the east side of the treatment site.

New electrical feeds on the east side of the treatment site would distribute from existing overhead lines underground to a new pad-mounted transformer servicing feeds to the new 1,000 Amp 480/277V 3-phase main switchgear. This equipment would supply power to the new pumps and equipment associated with the LSS systems and animal care functions. The availability of this power supply has been confirmed with PG&E (MMC, 2004.

New electrical feeds on the west side of the treatment site would distribute from existing overhead lines underground to a new pad-mounted transformer servicing feeds to the new 800 Amp 208/120V 3-phase main switchgear. This equipment would supply power to the equipment and lighting within the buildings. The availability of this power supply has been confirmed with PG&E (MMC, 2004).

Water

The domestic water system under Alternative 2 would maintain the existing water service connection points. The details of how the domestic systems would use water supplied to the site are described in the water use summary report (Appendix E). Improved controls within the proposed LSS design would enable The Center to schedule peak water usage at non-peak times of day.

Under Alternative 2 all new buildings would include fire sprinklers. The design intent would be to extend the water-service feeding the existing on-site hydrant into the new buildings for fire sprinklers. A recent test of a nearby hydrant indicated that pressure and flow were more than adequate although the closest hydrant to the treatment site currently needs repair. The required minimum fire flow for this facility would be 900 gallons per minute for a duration of 60-90 minutes (Wells, personal communication). Fire flow is not included in the above water use quantities, as there is no way of predicting the extent of water use in an emergency.

Visitor Experience

Alternative 2 would provide an enhanced visitor experience. There would be a clear sense of arrival from the access drive to the designated parking area and a path from the main parking area to the entrance on the west side of the Marine Science Community Education Center. Visitors would enter a discovery room, which orients them to The Center and its work as well as natural history on marine mammals. From there, visitors would enter the courtyard where animals could be viewed, and husbandry and veterinary functions could be viewed through inverted bays into the food preparation/pharmacy, chart room, laboratory, and necropsy (post mortem). Exhibits would further explain treatment protocols, disease research, human interaction, and rescue and release techniques. The public would be able to observe animals from two observation areas at ground level by walking between these buildings and from a second-level observation deck.

School groups would experience interactive labs and learn from The Center's teachers in an indoor classroom. The observation deck and amphitheater facilities would provide for education programs adjacent to the animals.

Alternative 3: Consolidated Program, Remote Parking

Under Alternative 3, construction of new buildings and facilities and changes to utilities would be the same as described under Alternative 2 (see Figure II-3).

Circulation and Parking

Vehicle Access

Operations and parking would be consolidated at or adjacent to the treatment site under this alternative and would minimize current internal traffic that operates between Fort Cronkhite and the treatment site. The new ring road would be used only by emergency vehicles and daily deliveries by large trucks, garbage pickup, fish deliveries, supplies, and animal admissions. The east side of the new ring road would extend beyond the currently developed footprint and would be closed to the public.

Parking

A new parking lot would be constructed on the former kennel site to accommodate most of the parking demand under this alternative. Alternative 3 would provide a total of 78 total parking spaces for daily operations as opposed to 91 spaces in the existing conditions. Two handicapped spaces would be located south of the Marine Mammal Medical Center, 60 spaces would be located in a new parking area, located on the former kennel site, and 16 spaces would be available outside The Center's assigned lands (potentially in the NPS Maintenance Yard). The new parking area would be designed to fit into the existing landscape and would be partially screened by the existing topography and contours. A new access road would lead to this parking lot and an approximately 200-foot-long path would connect the remote parking area to The Center.

Visitor Experience

As with Alternative 2, Alternative 3 would provide an enhanced visitor experience. There would be a clear sense of arrival from the access drive with a new drive to the parking lot and a path leading from the parking area to the main entrance on the west side of the Marine Science Community Education Center. Once the visitor has arrived through the main entrance, the visitor experience would be the same as described above under Alternative 2.

Alternative 4: Split Program, Limited New Construction

Under this Alternative, The Center would encompass a total of approximately 30,200 square feet of building space split between Fort Cronkhite (7,590 square feet) and the treatment site (22,610 square feet) (see Figure II-4).

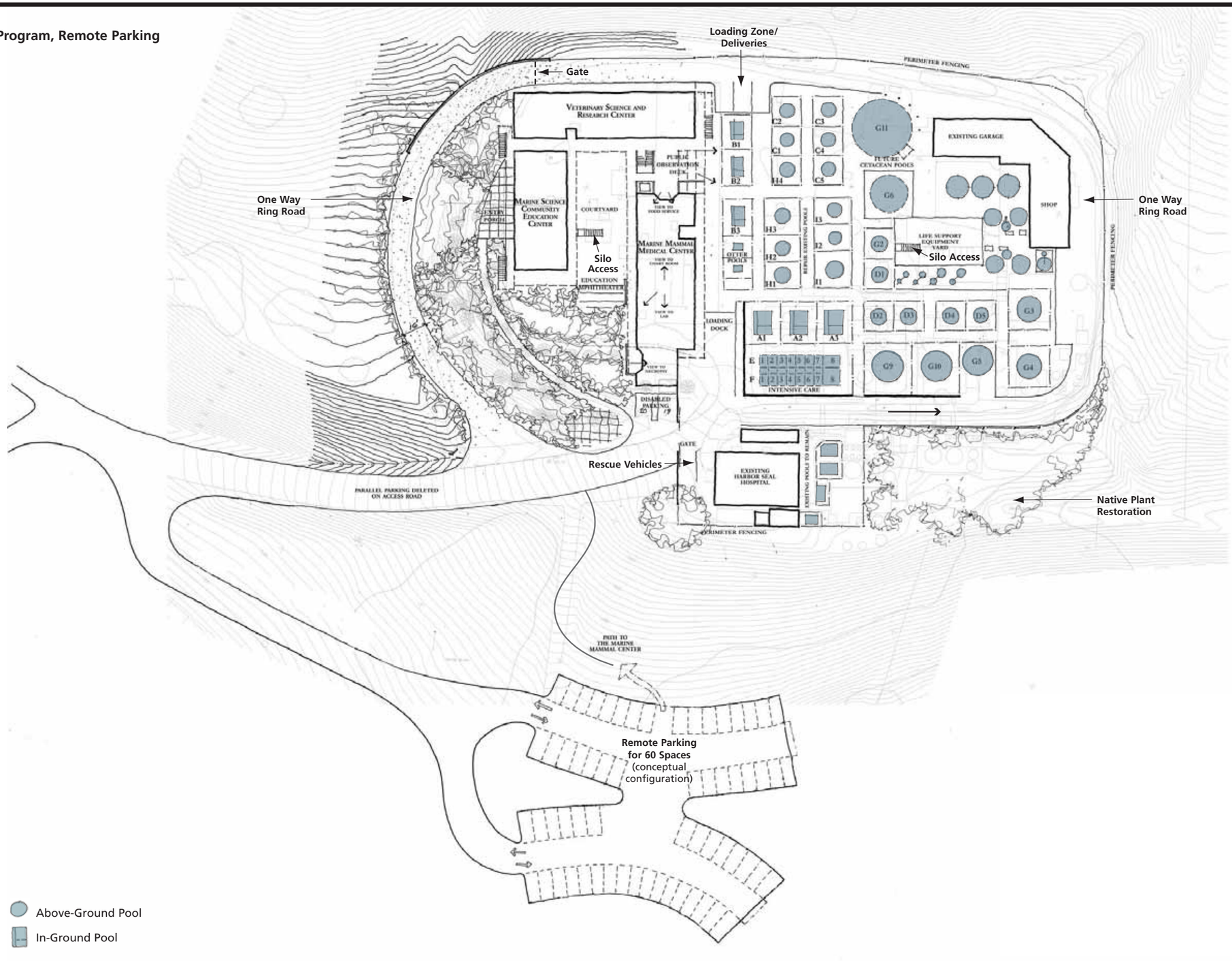
At the treatment site, approximately 12,900 square feet of existing space would be renovated. Approximately 7,430 square feet of the renovated space would be underground in the existing missile silos; 3,570 square feet would be in the existing garage and shop (which houses some labs and storage); and the remainder would be in the Harbor Seal Hospital (1,900 square feet). Like Alternatives 2 and 3, Alternative 4 includes the demolition of approximately 5,600 square feet of buildings. However, this alternative includes the construction of three new buildings totaling approximately 9,710 square feet as described below (as opposed to 17,500 square feet for Alternatives 2 and 3).

This alternative includes a new perimeter ring road for use by The Center and closed to the public. But, unlike Alternatives 2 and 3, the primary facility and road improvements would be made largely within the existing footprint of the center. The exception to this would be the construction of a remote parking lot for visitor and staff use on the former kennel site south of The Center.

Proposed New Facilities

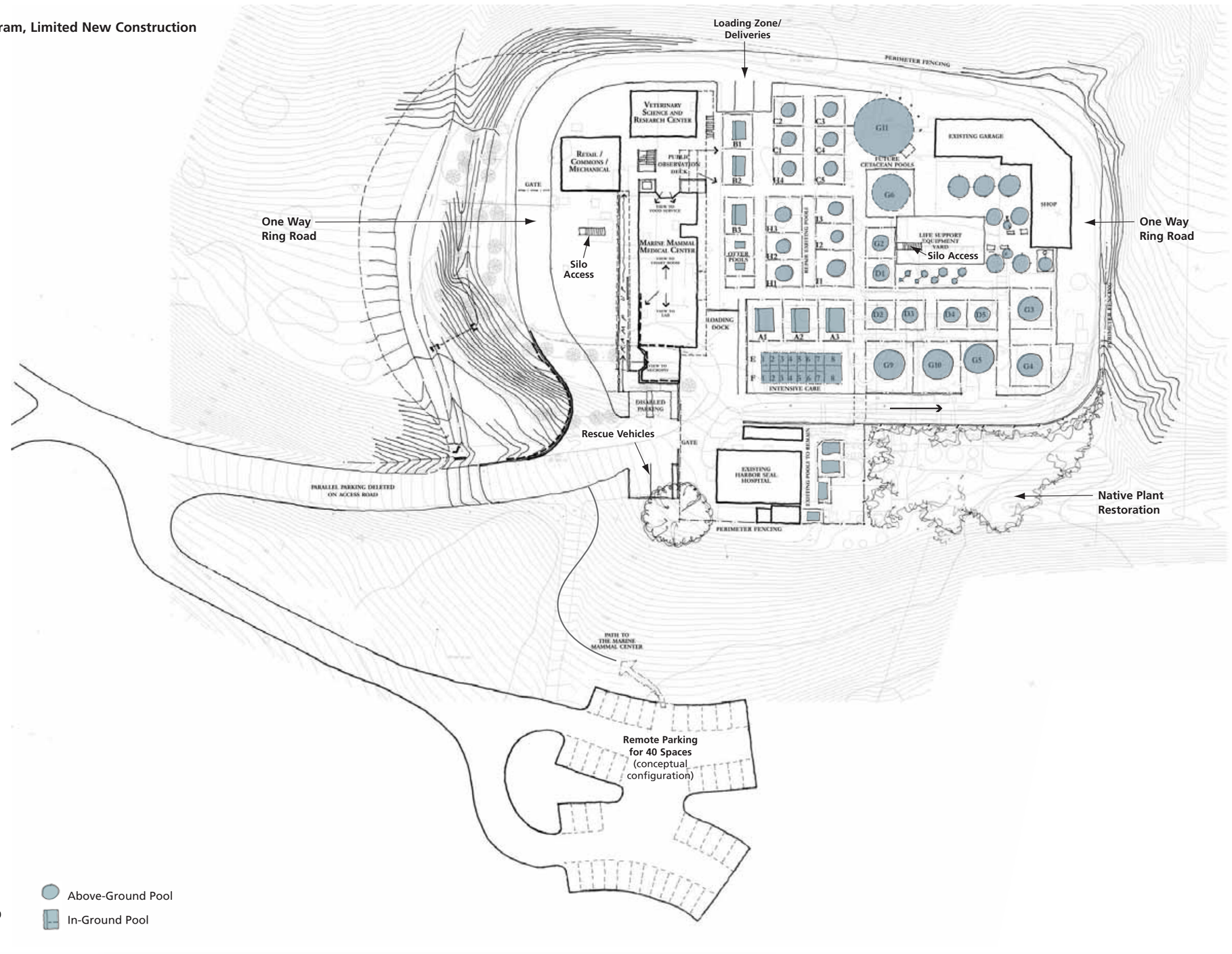
- **Marine Science Community Education Center:** There would be no Marine Science Community Education Center at the treatment site under Alternative 4. Education functions would be retained at Fort Cronkhite in Buildings #1044 and #1071 as described above.
- **Veterinary Science and Research Center:** Alternative 4 would include construction of a new Veterinary Science and Research Center at the treatment site. This two-story, 2,790-square foot facility would include veterinary science offices as well as facilities and life support offices. Construction of this building would replace the functions of the Veterinary Offices (1,750 square feet) and various storage buildings (1,120 square feet), which would be demolished.
- **Retail and Commons:** Alternative 4 would include a two-story, 3,000-square foot building that would house the gift shop, staff/volunteer commons (including tables and seating areas), public restrooms, and the mechanical room. Construction of this building would replace the functions of the Gift Shop and Gift Shop storage (600 and 320 square feet, respectively, which would be demolished).
- **Marine Mammal Medical Center:** Alternative 4 would construct a two-building, 3,920-square foot Marine Mammal Medical Center. It would include an animal food preparation area, pharmacy, chart room, research laboratory, and necropsy area. Construction of this building would replace the functions of the Necropsy Lab (250 square feet), the Fish Kitchen (900 square feet), and Chart Room (650 square feet), which would be demolished.

Figure II-3
Alternative Three: Consolidated Program, Remote Parking



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

Figure II-4
Alternative Four: Split Program, Limited New Construction



SOURCE: Scott Dennis Architect, Noll & Tam Architects, and Environmental Science Associates

The Medical Center would be designed to promote the educational mission of The Center by incorporating observation windows in the buildings allowing visitors to view staff/volunteer functions and activities at The Center. Educational exhibits would be placed near the observation windows to help interpret The Center's activities.

- **Fort Cronkhite:** At Fort Cronkhite The Center would continue to use 4,840 square feet of space in Building #1065 for administration and 1,180 square feet of space in Building #1071 for education. The 1,570 square feet of space in Building #1044 would be converted from lab space to education and research (see Figure I-1).

Circulation and Parking

Vehicle Access

Some of The Center's operations and parking would be consolidated at the treatment site under this alternative to help reduce current internal traffic that operates between Fort Cronkhite and the treatment site. Like other action alternatives, Alternative 4 includes construction of a narrow ring road for emergency vehicle access and daily deliveries. Under this alternative, however, the road would be located within the existing developed footprint of The Center.

Parking

Under this alternative, parking would be split between the treatment site, in a new parking lot, and Fort Cronkhite. Alternative 4 would provide a total of 78 parking spaces, as opposed to 91 existing spaces. Two handicapped parking spaces would be included west of the Veterinary Science and Research Center, 40 spaces would be located at a new parking lot located south of The Center at the former kennel site, and 16 spaces would be available outside The Center's assigned lands (potentially in the NPS Maintenance Yard). The new remote lot would be partially screened, visually, by the topography in the area. An approximately 200-foot path would connect the remote parking area to The Center. Parking (20 spaces) for Fort Cronkhite buildings would continue to be accommodated in the Fort Cronkhite area.

Utilities

Utilities under Alternative 4 would be configured as described under Alternatives 2 and 3 with the exception that proposed wastewater flow and electrical demand could be slightly reduced under Alternative 4(Marine Mammal Center, 2003).

Visitor Experience

In Alternative 4, the sense of arrival would be less defined than in Alternatives 2 and 3. Since there is no discovery/orientation room, visitors would walk up the path from the main parking area and enter the courtyard, relying on outside exhibits for orientation. The inverted bays, looking into the food preparation/pharmacy, chart room, laboratory, and necropsy (post mortem) would be available for a more passive, self-guided learning experience. Visitors would be able to observe animals at ground level by walking between these buildings to an observation area.

The education building would remain about ½ mile away from the treatment site (at Fort Cronkhite). Program space would be very limited under this alternative. There would be no interactive labs. Education programs at the treatment site would take place on outdoor bleachers, as in Alternative 1.

Preferred Alternative

The Preferred Alternative for the Marine Mammal Center Site and Facilities Improvements would be Alternative 2. This choice is based on a determination that Alternative 2 would best meet the Project Need and Purpose while still meeting the requirements of NEPA and the National Park Service's NEPA guidelines. The consolidation of almost all of The Center's functions on or adjacent to the treatment site, including the location of new parking on the west side of the access drive and adjacent to the built area, would bring maximum efficiency to The Center's operations and avoid the impacts that would occur with the development of a remote parking lot.

Environmentally Preferred Alternative

The CEQ Regulations implementing NEPA and the National Park Service NEPA guidelines require that "the alternative or alternatives which were considered to be environmentally preferable" be identified (Council on Environmental Quality Regulations, Section 1505.2). Environmentally preferable is defined as "the alternative that will promote the national environmental policy as expressed in NEPA Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources."

The environmentally preferable alternative for the Marine Mammal Center Site and Facilities Improvements is based on these national environmental policy goals. The National Park Service has determined that the environmentally preferable alternative for this project is Alternative 4. The smaller site and building footprint proposed for Alternative 4, when compared with Alternatives 2 and 3 would involve the least disruption to the biological and physical environment. Due to the reduced square footage of new construction, largely within the existing developed footprint, Alternative 4 would best protect, preserve, and enhance historic, cultural, and natural resources.

On the other hand, the Environmentally Preferred Alternative would bring no reduction in operational traffic and the associated safety improvements. In addition, operational functions under Alternative 4 would not fulfill project objectives for educational and site efficiencies as fully as the other action alternatives. The differences between the environmental impacts of Alternative 4 and the Preferred Alternative are not substantial given these considerations.

Alternatives Considered But Rejected

Several variations to these alternatives were considered during the planning process but were dismissed from further consideration for various reasons.

One alternative considered studied the inclusion of alternate new paved roads within The Center's built footprint, to ease delivery of large animals and equipment and to facilitate emergency access. In particular, this alternative considered construction of a road directly through the middle of the treatment site, in close proximity to the pens and pools. This alternative would have avoided impacts to wetlands but would have required substantially more grading and site work to accomplish. This particular alternative also would have been highly disruptive to the recovering mammals as a result of having a road and vehicles run adjacent to the

pens and pools. This alternative had greater environmental impacts to achieve similar results when compared to the alternatives studied.

Another alternative was considered that would have located small, dispersed parking areas throughout the facility, including on the southeastern side where the water treatment facilities are now located. This alternative was rejected because it was visually incompatible and disruptive. The alternatives evaluated in this EA had similar results with less environmental impacts.

Other alternatives were considered that either eliminated the ring road or included only a partial ring road on the south and east sides. Alternatives that considered no construction of a ring road were dismissed from further consideration since this would eliminate the possibility of providing adequate emergency (fire truck) access to the treatment site's facilities and therefore not meet the project's objectives. One alternative considered the construction of a partial ring road but would require construction of a hammer head turn around at the southeast corner of the facility. Physical resource impacts would have included major cut and fill and construction of a large, prominent retaining wall. This alternative would have greater environmental impacts to achieve the project objectives when compared to the alternatives studied.

An early alternative was considered that included an ocean outfall to bring salt water to the site. This component was rejected due to feasibility related to cost and the extensive time it would take to complete this effort including environmental permitting requirements.

Re-locating The Center to a new site either within or outside of GGNRA was also considered. No feasible sites were identified that would meet the project objectives and could be supported by The Center's network of staff and volunteer resources. Relocation outside the park also would mean the loss of a valuable park partner which was not desirable.

Comparison of Alternatives

This section compares the key features of the alternatives and summarizes the potential environmental consequences. Table II-1 identifies the key components of the alternatives proposed for the Marine Mammal Center Site and Facilities Improvements Project and assesses whether the alternatives fulfill the purpose of and need for the project. Table II-2 summarizes and compares the potential environmental consequences associated with each alternative. Potential environmental consequences are analyzed in more detail in Chapter 4, Environmental Consequences. Table II-3 presents square footage of proposed buildings under each alternative. Table II-4 summarizes the daily operational parking needs under each alternative.

Table II-1
Alternatives Comparison Table

Alternative Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Marine Mammal Center Facilities	▪ Administrative, educational and research functions would continue to be located at Fort Cronkhite and separated from the treatment site	▪ All Marine Mammal Center functions would be consolidated at the treatment site in upgraded and expanded facilities	▪ Same as Alternative 2	▪ Administrative, educational and research functions would continue to be located at Fort Cronkhite and separated from the treatment site ▪ Replace some treatment site functions currently located in modified freight containers with new permanent buildings
Buildings	▪ 26,000 square feet of total built space ▪ 18,500 square feet of building space at the treatment site – Veterinary Offices – Necropsy Lab and Oiled Wildlife Station – Chart room – Fish Kitchen – Gift Shop – Outdoor Education Area ▪ 7,590 square feet of building space at Fort Cronkhite retained in three buildings – Administrative functions – Education rooms	▪ 35,200 square feet of total built space ▪ 30,400 square feet of building space at the treatment site – construct 17,500 square feet – renovate 12,900 square feet ▪ Demolish 5,600 square feet of non-historic structures on the treatment site ▪ New Facilities (construction of 17,500 sq. ft. as above) – New two-story, 5,760-square foot Marine Science Community Education Center – New two-story, 7,800-square foot Veterinary Science and Research Center – New one-story, 3,920-square foot Marine Mammal Medical Center ▪ 4,800 square feet of building space at Fort Cronkhite retained in one building ▪ No changes to the Harbor Seal Hospital. ▪ Demolish LSS equipment and install new equipment in and above silos	▪ Same as Alternative 2	▪ 30,200 square feet of total built space ▪ 22,610 square feet of building space at treatment site – construct 9,710 square feet – renovate 12,900 square feet ▪ Demolish 5,600 square feet of non-historic structures on the treatment site ▪ New Facilities (construction of 9,710 sq. ft. as above) – New two-story, 2,790-square foot Veterinary Science and Research Center – New one-story, 3,920-square foot Marine Mammal Medical Center – New 3,000-square foot Retail/Commons Center ▪ 7,590 square feet of building space at Fort Cronkhite retained in three buildings ▪ No changes to the Harbor Seal Hospital ▪ Demolish LSS equipment and install new equipment in and above silos

Table II-1 (Continued)
Alternatives Comparison Table

Alternative Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Pens and Pools	▪ Pens and pools would continue to be used in their current configuration	▪ Upgrade pens and pools ▪ Replace existing structures with sturdier materials ▪ Provide shade structures to many pools ▪ Build pools at or near grade to enable easier transfer of animals and easier access to animals ▪ Upgrade and relocate cetacean pool	▪ Same as Alternative 2	▪ Same as Alternative 2
Amenities/Visitor Experience	▪ No additional visitor interpretation or education amenities would be provided ▪ Most classroom discussion would continue to be held outside with little opportunity to view the animals at the treatment site ▪ Limited visitor orientation and sense of arrival provided ▪ Outdoor seating for several dozen visitors	▪ Centralized courtyard and amphitheater providing seating for up to 60 visitors ▪ Public observation deck overlooking pens and pools ▪ Observation windows to necropsy, laboratory, chart room and marine mammal food preparation areas ▪ Sense of arrival and visitor orientation provided ▪ Visitor education and interpretive spaces provided	▪ Same as Alternative 2	▪ Public observation deck overlooking pens and pools ▪ Observation windows of necropsy, laboratory, chart room and marine mammal food preparation area ▪ Limited visitor orientation and sense of arrival provided ▪ Outdoor seating for several dozen visitors
Access and Parking	▪ 91 parking spaces split between the treatment site and Fort Cronkhite – 42 at treatment site – 13 on access road – 12 outside Center's assigned lands – 24 at Fort Cronkhite ▪ Special event overflow parking accommodated in other locations in the Headlands in coordination with NPS ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces including 2 disabled access parking spaces – 43 at treatment site – 19 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 62 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 40 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard

Table II-1 (Continued)
Alternatives Comparison Table

Alternative Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Utilities	■ 47,000-gallon water holding capacity in existing pens and pools ■ Use 4,520,000 - 5,950,000 gallons of water per year ■ Water intake, filtration, and discharge facilities would not be upgraded and would continue to operate inefficiently ■ Improvements to stormwater management and actions taken to avoid sewer lift station overflows only when funding allows	■ Pens and pools increased to 207,000-gallon water holding capacity ■ Use 3,702,000 – 5,747,000 gallons of water per year ■ Upgrade filtration system, relocated and housed underground in the old Nike silo ■ Improvements to stormwater management and actions taken to avoid sewer lift station overflows ■ No increase in requirements for gas or electric	■ Same as Alternative 2	■ Same as Alternative 2
Site Lighting	■ Site lighting would continue to impede upon views of night skies with some shielding of existing lights	■ Focus site lighting downward and shield structurally to allow for natural night skies ■ Site lighting would be designed to minimize adverse effect on marine mammal patients ■ Incorporate natural dark into site design to the extent possible	■ Same as Alternative 2	■ Same as Alternative 2

Table II-2
Summary of Environmental Consequences

Alternative 1 No Action	**Alternative 2** Consolidated Program	**Alternative 3** Consolidated Program, Remote Parking	**Alternative 4** Split Program, Limited New Construction
WATER RESOURCES			
Local, long-term, moderate, adverse effect on water resources associated with The Center's out-dated and inefficient system. *Water use:* 4.5 – 6 million gallons per year	Local, Long-term, Moderate, Beneficial Impact from increased efficiency in water use. *Water use:* 3.7 – 5.7 million gallons per year	Local, Long-term, Moderate, Beneficial Impact from increased efficiency in water use. *Water use:* 3.7 – 5.7 million gallons per year	Local, Long-term, Moderate, Beneficial Impact from increased efficiency in water use. *Water use:* 3.7 – 5.7 million gallons per year
No Increased stormwater Impacts.	Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts – 29,000 square feet of additional impermeable surfaces.	Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts – 46,200 square feet of additional impermeable surfaces.	Local, Long and Short-term, Minor, Adverse Impact from stormwater impacts. 13,470 square feet of additional impermeable surfaces.
No changes in wastewater/sanitary system	Local, Long-term, Moderate, Beneficial Impact from increased capacity to mitigate for lift-station overflows during storm conditions.	Local, Long-term, Moderate, Beneficial Impact from increased capacity to mitigate for lift-station overflows during storm conditions.	Local, Long-term, Moderate, Beneficial Impact from increased capacity to mitigate for lift-station overflows during storm conditions.
BIOLOGICAL RESOURCES			
	Placement of the ring road would result in the permanent fill of **.08 acres** of wetlands.	Placement of the ring road would result in the permanent fill of **.08** acres of wetlands.	Placement of the ring road would result in the permanent fill of **.08** feet of wetlands.
	Approximately **15** Monterey pine and cypress trees (potential to impact breeding and nesting birds) removed and **17,000 square feet (or .40 acres)** of non-native annual grassland removed for site expansion and parking.	Approximately **5** Monterey pine and cypress trees (potential to impact breeding and nesting birds) removed and **23,000 square feet (or .52 acres)** of non-native annual grassland removed for site expansion and parking..	Approximately **8** Monterey pine and cypress trees (potential to impact breeding and nesting birds) removed and **13,000 square feet (or .3 acres)** of non-native annual grassland removed for site expansion and parking.
	Approximately **8,200 square feet** of native plants would be restored on the southeast edge of the site.	Approximately **8,200 square feet** of native plants would be restored on the southeast edge of the site.	Approximately **8,200 square feet** of native plants would be restored on the southeast edge of the site.
		Construction of the remote parking has the potential to affect special status plants if they exist within the project boundary.	Construction of the remote parking has the potential to affect special status plants if they exist within the project boundary.

Table II-2 (Continued)
Summary of Environmental Consequences

Alternative 1 No Action	**Alternative 2** Consolidated Program	**Alternative 3** Consolidated Program, Remote Parking	**Alternative 4** Split Program, Limited New Construction
GEOLOGY, SOILS AND SEISMICITY			
No geologic, soil, or seismic safety impacts associated with project implementation would result.	Excavation of approximately **4,800** cubic yards of material and the placement of approximately **2,400** cubic yards of fill in the area of the proposed ring road and western edge additional parking.	Excavation of approximately **3,400** cubic yards of material, primarily in the area west of the existing Center and the remote parking area (kennel site), and the placement of approximately **2,200** cubic yards of fill in these areas and along the ring road.	Excavation of approximately **1,600** cubic yards of material, southwest corner of the existing Center site and the remote parking area, and placement of approximately **2,000** cubic yards of fill primarily around the ring road.
HAZARDOUS MATERIALS			
Alternative 1 would have no effect with respect to asbestos and lead-based paint.	Renovation could expose construction workers to hazardous levels of lead-based paint and asbestos.	Renovation could expose construction workers to hazardous levels of lead-based paint and asbestos.	Renovation could expose construction workers to hazardous levels of lead-based paint and asbestos.
	Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality.	Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality.	Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality.
AIR QUALITY			
Alternative 1 would have no effect with respect to air quality.	Construction of the project would generate fugitive dust (including PM10) and other criteria air pollutants from exhaust emissions.	Construction of the project would generate fugitive dust (including PM10) and other criteria air pollutants from exhaust emissions.	Construction of the project would generate fugitive dust (including PM10) and other criteria air pollutants from exhaust emissions.
NOISE			
Alternative 1 would have no effect with respect to noise emissions.	Construction noise levels would increase during 2 six-month periods of construction.	Construction noise levels would increase during 2 six-month periods of construction.	Construction noise levels would increase during 2 six-month periods of construction.
CULTURAL RESOURCES			
Cultural resources would be protected as they are currently.	Potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance.	Potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance.	Potential for the discovery of unidentified or unexpected subsurface archaeological resources during ground disturbance.
	Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts.	Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts.	Impacts to the views and vistas that now contribute to the cultural landscape would be considered moderate adverse impacts.
	New construction if designed to be compatible with the historic and cultural landscape would improve the degraded and inconsistent structures that now exist on the site.	New construction if designed to be compatible with the historic and cultural landscape would improve the degraded and inconsistent structures that now exist on the site.	New construction if designed to be compatible with the historic and cultural landscape would improve the degraded and inconsistent structures that now exist on the site.

Table II-2 (Continued)
Summary of Environmental Consequences

Alternative 1 No Action	**Alternative 2** Consolidated Program	**Alternative 3** Consolidated Program, Remote Parking	**Alternative 4** Split Program, Limited New Construction
TRANSPORTATION			
Problematic parking and circulation scenarios would continue to exist.	▪ 78 parking spaces including 2 disabled access parking spaces – 43 at treatment site – 19 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries. ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 62 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries. ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard	▪ 78 parking spaces for staff and visitors, including 2 disabled access parking spaces – 40 at treatment site (former kennel and disabled access) – 0 on access road – 16 outside Center's assigned lands – 0 at Fort Cronkhite ▪ New perimeter ring road to service emergency vehicles and deliveries ▪ Special event overflow parking – same as in Alternative 1 ▪ Buses park in NPS maintenance yard
No additional vehicle trips generated by this alternative and no changes to site access, on-site circulation or parking. Negligible increase in visitors.	Up to ten additional visitors would be expected on peak days. Given current traffic volumes, this additional traffic (up to 15 vehicle trips) would represent an increase of less than 0.10 percent over current conditions.	Up to ten additional visitors would be expected on peak days. Given current traffic volumes, this additional traffic (up to 15 vehicle trips) would represent an increase of less than 0.10 percent over current conditions.	Less than ten additional visitors would be expected on peak days. Given current traffic volumes, this additional traffic (up to 8 vehicle trips) would represent an increase of less than 0.8 percent over current conditions.
Buses would continue to park in the NPS maintenance yard with difficult access to the site.	Buses would continue to park in the NPS maintenance yard with difficult access to the site.	Buses would continue to park in the NPS maintenance yard with difficult access to the site.	Buses would continue to park in the NPS maintenance yard with difficult access to the site.
VISUAL RESOURCES			
The Center's facilities would continue to be incompatible with other historic facilities in the area.	Construction activity would be visible by recreational users and park staff in the project area.	Construction activity would be visible by recreational users and park staff in the project area	Construction activity would be visible by recreational users and park staff in the project area
18,500 square feet of building space in predominantly single story structures at treatment site	Would include approximately 17,500 square feet of building space in predominantly two-story structures at treatment site.	Would include approximately 17,500 square feet of building space in predominantly two-story structures at treatment site.	Would include approximately 9,700 square feet of building space in one- and two-story structures at the treatment site.
RECREATION AND PUBLIC USE			
Sub-optimal viewing opportunities for the visiting public would continue.	Temporary adverse effect visitor experience at The Marine Mammal Center during construction.	Temporary adverse effect visitor experience at The Marine Mammal Center during construction..	Temporary adverse affect visitor experience at The Marine Mammal Center during construction..
Educational programs would continue to operate with insufficient facilities.	Beneficial effect on recreation and public use due to improved educational and observation facilities and increased public parking spaces.	Beneficial effect on recreation and public use due to improved educational and observation facilities and increased public parking spaces.	Beneficial effect on recreation and public use in the project area due to improved observation facilities.

Table II-3
Square Footage Alternatives Comparison Table

Site Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
TREATMENT SITE				
New Marine Mammal Medical Center	Will not be constructed	3,920 Square Feet	3,920 Square Feet	3,920 Square Feet
New Veterinary Science and Research Center	Will not be constructed	7,800 Square Feet	7,800 Square Feet	2,790 Square Feet
New Marine Science Community Education Center	Will not be constructed	5,760 Square Feet	5,760 Square Feet	3,000 Square Feet
Reuse at Treatment Site	18,500 Square Feet	12,9000 Square Feet	12,900 Square Feet	12,900 Square Feet
TOTAL TREATMENT SITE	18,500 Square Feet	30,380 Square Feet	30,380 Square Feet	22,610 Square Feet
TOTAL AT FORT CRONKHITE	7,590 Square Feet	4,800 Square Feet	4,800 Square Feet	7,590 Square Feet
TOTAL	26,090 Square Feet	35,180 Square Feet	35,180 Square Feet	30,200 Square Feet

Table II-4
Daily Operational Parking Space Needs

Site Component	Alternative 1: (No Action)	Alternative 2	Alternative 3	Alternative 4
Treatment Site	42	43	2	2
New Lot at Former Kennel Site	0	0	60	40
Access Road	13	19	0	0
Outside of Assigned Area (NPS Maintenance Yard or Fort Cronkhite)	12	16	16	16
Fort Cronkhite	24	0	0	20
TOTAL	91	78	78	78